2. Title: Antimicrobial Sensitivities of Enteric Bacterial Pathogens

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Objective Enteric diseases represent one of the most important medical problems of troops operating in tropical areas. Rapid mobility of troops into combat areas could result in their contracting diarrheal diseases at critical times. The objectives of this study were to determine bacteriostatic levels of antibiotics for enteric organisms recently isolated from patients with acute diarrhea and to provide data for selection of antimicrobials to moderate effects of outbreaks of diarrhea in military or civil populations.

Description All organisms in this study were isolated from stools or rectal swabs from patients with acute diarrhea. The tube dilution technique using trypticase soy broth has been used routinely for the last 4 years to determine sensitivities of enteropathogenic isolates to antimicrobials. During November and December of 1967 the plate dilution technique was evaluated by comparing it with the tube dilution technique for testing recently isolated Salmonellae, Shigellae and EEC strains. Results indicated that the two techniques are comparable in most instances. In more than 1000 comparisons there were only 3 instances where there was greater than a 4-fold difference between the methods. As a result of this study the plate dilution technique was adopted in January 1968 for testing of enteropathogens' sensitivities to antibiotics.

Progress Sensitivities of enteropathogens to antimicrobials are shown in Tables 4—9. Most enteropathogens continued to be very sensitive to colimycin; moderately sensitive to nalidixic acid and to a lesser extent, furazolidone. Practically all isolates of S. paratyphi B were resistant to furazolidone, chloramphenicol, neomycin and oxytetracycline, moderately sensitive to nalidixic acid and uniformly sensitive to colimycin. Most isolates of enteropathogenic E. coli were resistant to chloramphenicol, and oxytetracycline; moderately sensitive to neomycin and furazolidone and all isolates were sensitive to colimycin and nalidixic acid. Based on these and prior in vitro studies, the use of chloramphenicol or oxytetracycline is not indicated for therapy of most cases of bacterial diarrhea in Thailand and the finding that both Salmonellae and Shigellae have remained sensitive in vitro to nalidixic acid and colimycin justifies considering them rather than broad spectrum antibiotics when antimicrobials are used to treat diarrheal diseases.

Summary The plate dilution technique was found to be comparable to the tube dilution technique for determination of sensitivities of enteropathogens to antimicrobials. Most enteropathogens tested were sensitive to colimycin and nalidixic acid and were resistant to oxytetracycline and chloramphenicol.